

UCT-0048

IN THE CLAIMS

1. (currently amended) A process comprising electrochemically reacting of a monomeric composition comprising thieno[3,4-b]thiophene, to form a polymeric composition comprising units derived from the thieno[3,4-b]thiophene.

2. (currently amended) The process of claim 1, wherein the electrochemical reaction is in an electrochemical cell comprising an electrolyte, a working electrode, a counter electrode, and a reference electrode in operable communication.

3. (currently amended) The process of claim 2, wherein the working electrode is a ~~platinum~~platinum, gold, or vitreous carbon working electrode, and the counter electrode is platinum.

4. (original) The process of claim 3, wherein the working electrode is a vitreous carbon electrode and the electrolyte is tetrabutylammonium perchlorate/acetonitrile.

5. (currently amended) The process of claim 1, wherein the reaction provides the polymeric composition on an indium tin oxide substrate.

6. (original) The process of claim 1, further comprising reducing the polymeric composition.

7. (original) The process of claim 1, wherein the polymeric composition has a band gap of about 0.85 V.

8. (currently amended) The process of claim 87, wherein the polymeric composition is transparent.

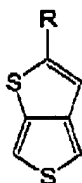
UCT-0048

9. (original) The process of claim 1, wherein the polymeric composition has no observable color in the oxidized form.

10. (original) The process of claim 1, wherein the monomeric composition further comprises a co-monomer reactive with the thieno[3,4-b]thiophene.

11. (currently amended) The process of claim ~~11~~10, wherein the co-monomer is a thiophene, substituted thiophene, substituted thieno[3,4-b]thiophene, dithieno[3,4-b:3',4'-d]thiophene, bithiophene, pyrrole, substituted pyrrole, phenylene, substituted phenylene, naphthalene, substituted naphthalene, biphenyl, substituted biphenyl, terphenyl, substituted terphenyl, phenylene vinylene, substituted phenylene vinylene, or a combination comprising at least one of the foregoing co-monomers, wherein the substituents are one or more of -H, hydroxyl, C₆-C₃₆ aryl, C₃-C₆ cycloalkyl, C₁-C₁₂ alkyl, halogen (i.e., F, Cl, Br, I), C₁-C₁₂ alkoxy, C₁-C₁₂ alkylthio, C₁-C₁₂ perfluoroalkyl, C₆-C₃₆ perfluoroaryl, pyridyl, cyano, thiocyanato, nitro, amino, C₁-C₁₂ alkylamino, C₁-C₁₂ aminoalkyl, acyl, sulfoxyl, sulfonyl, amido, and/or carbamoyl.

12. (currently amended) The process of claim ~~12~~11, wherein the co-monomer is



wherein R is C₁-C₁₂ primary, secondary or tertiary alkyl, cycloalkyl, C₆-C₃₆ aryl, or a functional group.

UCT-0048

13. (currently amended) The process of claim ~~12~~11, wherein the co-monomer is



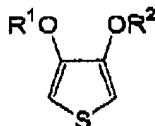
wherein X is C₁-C₄ alkylene or substituted C₁-C₄ alkylene.

14. (currently amended) The process of claim ~~14~~11, wherein the co-monomer is



wherein X is C₁-C₁₂ alkyl- or C₆-C₁₂ phenyl-substituted ethylene, or a 1,2-cyclohexylene.

15. (currently amended) The process of claim ~~12~~11, wherein the co-monomer is



wherein R₁¹ and R₂² are each independently -H, C₁-C₄ alkyl, phenyl, or substituted phenyl.

16. (original) The process of claim 1, wherein the monomeric composition further comprises a polyanion.

17. (currently amended) The process of claim ~~17~~16, wherein the polyanion is a polycarboxylate or a polymeric sulfonate.